



1600

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/520,489B

DATE: 06/17/2003

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Input Set : A:\A094us.app

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3 <110> APPLICANT: TSCHOPP, JURG  
5 <120> TITLE OF INVENTION: APRIL-A NOVEL PROTEIN WITH GROWTH EFFECTS  
7 <130> FILE REFERENCE: A049 US  
9 <140> CURRENT APPLICATION NUMBER: 09/520,489B  
10 <141> CURRENT FILING DATE: 2000-03-08  
12 <150> PRIOR APPLICATION NUMBER: PCT/US98/19191  
13 <151> PRIOR FILING DATE: 1998-09-11  
15 <150> PRIOR APPLICATION NUMBER: 60/079,384  
16 <151> PRIOR FILING DATE: 1998-03-26  
18 <150> PRIOR APPLICATION NUMBER: 60/058,786  
19 <151> PRIOR FILING DATE: 1997-09-12  
21 <160> NUMBER OF SEQ ID NOS: 16  
23 <170> SOFTWARE: PatentIn Ver. 2.1  
25 <210> SEQ ID NO: 1  
26 <211> LENGTH: 1346  
27 <212> TYPE: DNA  
28 <213> ORGANISM: Homo sapiens  
30 <400> SEQUENCE: 1  
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32 ggtctcaagg caacgctggc cccacgacgg agtgccagga gcactaacag tacccttagc 120  
33 ttgcttttct cctccctcct ttttattttc aagttccttt ttattttctcc ttgcgtaaca 180  
34 accttcttcc ctctctgcacc actgcccgtc ccttaccgg ccccgccacc tccttgctac 240  
35 cccactcttg aaaccacagc tgttggcagg gtccccagct catgccagcc tcatctcctt 300  
36 tcttgcttag ccccaaaggg cctccaggca acatgggggg cccagtcaga gagccggcac 360  
37 tctcagttgc cctctgggtg agttgggggg cagctctggg ggccgtggct tgtgccatgg 420  
38 ctctgctgac ccaacaaaca gagctgcaga gcctcaggag agaggtgagc cggctgcagg 480  
39 ggacaggagg ccctccaga atggggaagg gtatccctgg cagagtctcc cggagcagag 540  
40 ttccgatgcc ctggaagcct gggagaatgg ggagagatcc cggaaaaggg agcagtgtctc 600  
41 acccaaaaac agaagaagca gcactctgtc ctgcacctgg ttcccattaa cgccacctcc 660  
42 aaggatgact ccgatgtgac agaggtgatg tggcaaccag ctcttaggcg tgggagaggc 720  
43 ctacaggccc aaggatatgg tgtccgaatc caggatgtcg gagtttatct gctgtatagc 780  
44 caggctctgt ttcaagacgt gactttcacc atgggtcagg tgggtgtctcg agaaggccaa 840  
45 ggaaggcagg agactctatt ccgatgtata agaagtatgc cctcccaccc ggaccggggc 900  
46 tacaacagct gctatagcgc aggtgtcttc catttacacc aaggggatat tctgagtgtc 960  
47 ataattcccc gggcaagggc gaaacttaac ctctctccac atggaacctt cctgggggtt 1020  
48 gtgaaactgt gattgtgtta taaaaagtgg ctcccagctt ggaagaccag ggtgggtaca 1080  
49 tactggagac agccaagagc tgagtatata aaggagaggg aatgtgcagg aacagaggca 1140  
50 tcttctctggg tttggctccc cgttctctac ttttcccttt tcattcccac cccctagact 1200  
51 ttgattttac ggatatcttg ctctgtttcc ccatggagct ccgaattctt gcgtgtgtgt 1260  
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53 gcattccagaa cagcaccacc atctta 1346  
56 <210> SEQ ID NO: 2  
57 <211> LENGTH: 250

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58 <212> TYPE: PRT
59 <213> ORGANISM: Homo sapiens
61 <400> SEQUENCE: 2
62 Met Pro Ala Ser Ser Pro Phe Leu Leu Ala Pro Lys Gly Pro Pro Gly
63   1           5           10           15
65 Asn Met Gly Gly Pro Val Arg Glu Pro Ala Leu Ser Val Ala Leu Trp
66           20           25           30
68 Leu Ser Trp Gly Ala Ala Leu Gly Ala Val Ala Cys Ala Met Ala Leu
69           35           40           45
71 Leu Thr Gln Gln Thr Glu Leu Gln Ser Leu Arg Arg Glu Val Ser Arg
72           50           55           60
74 Leu Gln Gly Thr Gly Gly Pro Ser Gln Asn Gly Glu Gly Tyr Pro Trp
75           65           70           75           80
77 Gln Ser Leu Pro Glu Gln Ser Ser Asp Ala Leu Glu Ala Trp Glu Asn
78           85           90           95
80 Gly Glu Arg Ser Arg Lys Arg Arg Ala Val Leu Thr Gln Lys Gln Lys
81           100          105          110
83 Lys Gln His Ser Val Leu His Leu Val Pro Ile Asn Ala Thr Ser Lys
84           115          120          125
86 Asp Asp Ser Asp Val Thr Glu Val Met Trp Gln Pro Ala Leu Arg Arg
87           130          135          140
89 Gly Arg Gly Leu Gln Ala Gln Gly Tyr Gly Val Arg Ile Gln Asp Ala
90          145          150          155          160
92 Gly Val Tyr Leu Leu Tyr Ser Gln Val Leu Phe Gln Asp Val Thr Phe
93           165          170          175
95 Thr Met Gly Gln Val Val Ser Arg Glu Gly Gln Gly Arg Gln Glu Thr
96           180          185          190
98 Leu Phe Arg Cys Ile Arg Ser Met Pro Ser His Pro Asp Arg Ala Tyr
99           195          200          205
101 Asn Ser Cys Tyr Ser Ala Gly Val Phe His Leu His Gln Gly Asp Ile
102          210          215          220
104 Leu Ser Val Ile Ile Pro Arg Ala Arg Ala Lys Leu Asn Leu Ser Pro
105          225          230          235          240
107 His Gly Thr Phe Leu Gly Phe Val Lys Leu
108           245          250

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111 &lt;210&gt; SEQ ID NO: 3

112 &lt;211&gt; LENGTH: 917

113 &lt;212&gt; TYPE: DNA

114 &lt;213&gt; ORGANISM: Mus sp.

116 &lt;400&gt; SEQUENCE: 3

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117 gaattcggca cgaggetcca ggccacatgg ggggctcagt cagagagcca gccctttcgg 60
118 ttgctctttg gttgagttgg ggggcagttc tgggggctgt gacttgtgct gtcgcactac 120
119 tgatccaaca gacagagctg caaagcctaa ggcgggaggt gagccggctg cagcggagtg 180
120 gagggccttc ccagaagcag ggagagcgcc catggcagag cctctgggag cagagtccctg 240
121 atgtcctgga agcctggaag gatggggcga aatctcggag aaggagagca gtactcacc 300
122 agaagcaca gaagaagcac tcagtcctgc atcttgttcc agttaacatt acctccaagg 360
123 actctgacgt gacagaggtg atgtggcaac cagtacttag gcgtgggaga ggccctggag 420
124 gccaggggag acattgtacg agtctgggac actggaattt atctgctcta tagtcaggtc 480
125 ctgtttcatg atgtgacttt cacaatgggt cagggtggtat ctcgggaagg acaagggaga 540

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126 agagaaactc tattccgatg tatcagaagt atgccttctg atcctgaccg tgcctacaat 600
127 agctgctaca gtgcaggtgt ctttcattta catcaagggg atattatcac tgtcaaaatt 660
128 ccacgggcaa acgcaaaact tagcctttct ccgcatggaa cattcctggg gtttgtgaaa 720
129 ctatgattgt tataaagggg gtggggattt cccattccaa aaactggcta gacaaaggac 780
130 aaggaacggt caagaacagc tctccatggc ttgtgccttga ctgttggtcc tccctttgcc 840
131 tttcccgcctc ccactatctg ggctttgact ccatggatat taaaaaagta gaatattttg 900
132 tgtttatctc ccaaaaaa                                     917

```

135 &lt;210&gt; SEQ ID NO: 4

136 &lt;211&gt; LENGTH: 232

137 &lt;212&gt; TYPE: PRT

138 &lt;213&gt; ORGANISM: Mus sp.

140 &lt;400&gt; SEQUENCE: 4

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141 Met Gly Gly Ser Val Arg Glu Pro Ala Leu Ser Val Ala Leu Trp Leu
142   1           5           10           15
144 Ser Trp Gly Ala Val Leu Gly Ala Val Thr Cys Ala Val Ala Leu Leu
145           20           25           30
147 Ile Gln Gln Thr Glu Leu Gln Ser Leu Arg Arg Glu Val Ser Arg Leu
148           35           40           45
150 Gln Arg Ser Gly Gly Pro Ser Gln Lys Gln Gly Glu Arg Pro Trp Gln
151           50           55           60
153 Ser Leu Trp Glu Gln Ser Pro Asp Val Leu Glu Ala Trp Lys Asp Gly
154   65           70           75           80
156 Ala Lys Ser Arg Arg Arg Arg Ala Val Leu Thr Gln Lys His Lys Lys
157           85           90           95
159 Lys His Ser Val Leu His Leu Val Pro Val Asn Ile Thr Ser Lys Asp
160           100          105          110
162 Ser Asp Val Thr Glu Val Met Trp Gln Pro Val Leu Arg Arg Gly Arg
163           115          120          125
165 Gly Pro Gly Gly Gln Gly Asp Ile Val Arg Val Trp Asp Thr Gly Ile
166           130          135          140
168 Tyr Leu Leu Tyr Ser Gln Val Leu Phe His Asp Val Thr Phe Thr Met
169 145           150          155          160
171 Gly Gln Val Val Ser Arg Glu Gly Gln Gly Arg Arg Glu Thr Leu Phe
172           165          170          175
174 Arg Cys Ile Arg Ser Met Pro Ser Asp Pro Asp Arg Ala Tyr Asn Ser
175           180          185          190
177 Cys Tyr Ser Ala Gly Val Phe His Leu His Gln Gly Asp Ile Ile Thr
178           195          200          205
180 Val Lys Ile Pro Arg Ala Asn Ala Lys Leu Ser Leu Ser Pro His Gly
181           210          215          220
183 Thr Phe Leu Gly Phe Val Lys Leu
184 225           230

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187 &lt;210&gt; SEQ ID NO: 5

188 &lt;211&gt; LENGTH: 233

189 &lt;212&gt; TYPE: PRT

190 &lt;213&gt; ORGANISM: Homo sapiens

192 &lt;400&gt; SEQUENCE: 5

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193 Met Gly Gly Pro Val Arg Glu Pro Ala Leu Ser Val Ala Leu Trp Leu
194   1           5           10           15

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196 Ser Trp Gly Ala Ala Leu Gly Ala Val Ala Cys Ala Met Ala Leu Leu
197          20          25          30
199 Thr Gln Gln Thr Glu Leu Gln Ser Leu Arg Arg Glu Val Ser Arg Leu
200          35          40          45
202 Gln Gly Thr Gly Gly Pro Ser Gln Asn Gly Glu Gly Tyr Pro Trp Gln
203          50          55          60
205 Ser Leu Pro Glu Gln Ser Ser Asp Ala Leu Glu Ala Trp Glu Asn Gly
206 65          70          75          80
208 Glu Arg Ser Arg Lys Arg Arg Ala Val Leu Thr Gln Lys Gln Lys Lys
209          85          90          95
211 Gln His Ser Val Leu His Leu Val Pro Ile Asn Ala Thr Ser Lys Asp
212          100         105         110
214 Asp Ser Asp Val Thr Glu Val Met Trp Gln Pro Ala Leu Arg Arg Gly
215          115         120         125
217 Arg Gly Leu Gln Ala Gln Gly Tyr Gly Val Arg Ile Gln Asp Ala Gly
218          130         135         140
220 Val Tyr Leu Leu Tyr Ser Gln Val Leu Phe Gln Asp Val Thr Phe Thr
221 145          150         155         160
223 Met Gly Gln Val Val Ser Arg Glu Gly Gln Gly Arg Gln Glu Thr Leu
224          165         170         175
226 Phe Arg Cys Ile Arg Ser Met Pro Ser His Pro Asp Arg Ala Tyr Asn
227          180         185         190
229 Ser Cys Tyr Ser Ala Gly Val Phe His Leu His Gln Gly Asp Ile Leu
230          195         200         205
232 Ser Val Ile Ile Pro Arg Ala Arg Ala Lys Leu Asn Leu Ser Pro His
233          210         215         220
235 Gly Thr Phe Leu Gly Phe Val Lys Leu
236 225         230
239 <210> SEQ ID NO: 6
240 <211> LENGTH: 134
241 <212> TYPE: PRT
242 <213> ORGANISM: Homo sapiens
244 <400> SEQUENCE: 6
245 Val Leu His Leu Val Pro Ile Asn Ala Thr Ser Lys Asp Asp Ser Asp
246 1          5          10          15
248 Val Thr Glu Val Met Trp Gln Pro Ala Leu Arg Arg Gly Arg Gly Leu
249          20          25          30
251 Gln Ala Gln Gly Tyr Gly Val Arg Ile Gln Asp Ala Gly Val Tyr Leu
252          35          40          45
254 Leu Tyr Ser Gln Val Leu Phe Gln Asp Val Thr Phe Thr Met Gly Gln
255          50          55          60
257 Val Val Ser Arg Glu Gly Gln Gly Arg Gln Glu Thr Leu Phe Arg Cys
258 65          70          75          80
260 Ile Arg Ser Met Pro Ser His Pro Asp Arg Ala Tyr Asn Ser Cys Tyr
261          85          90          95
263 Ser Ala Gly Val Phe His Leu His Gln Gly Asp Ile Leu Ser Val Ile
264          100         105         110
266 Ile Pro Arg Ala Arg Ala Lys Leu Asn Leu Ser Pro His Gly Thr Phe
267          115         120         125

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270      130
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274 <211> LENGTH: 145
275 <212> TYPE: PRT
276 <213> ORGANISM: Homo sapiens
278 <400> SEQUENCE: 7
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280      1          5          10          15
282 Leu Asn Arg Arg Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg
283          20          25          30
285 Asp Asn Gln Leu Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser
286          35          40          45
288 Gln Val Leu Phe Lys Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu
289      50          55          60
291 Thr His Thr Ile Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys Val Asn
292      65          70          75          80
294 Leu Leu Ser Ala Ile Lys Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly
295          85          90          95
297 Ala Glu Ala Lys Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe
298          100         105         110
300 Gln Leu Glu Lys Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp
301          115         120         125
303 Tyr Leu Asp Phe Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala
304      130          135          140
306 Leu
307 145
310 <210> SEQ ID NO: 8
311 <211> LENGTH: 142
312 <212> TYPE: PRT
313 <213> ORGANISM: Homo sapiens
315 <400> SEQUENCE: 8
316 Ala Ala His Leu Ile Gly Asp Pro Ser Lys Gln Asn Ser Leu Leu Trp
317      1          5          10          15
319 Arg Ala Asn Thr Asp Arg Ala Phe Leu Gln Asp Gly Phe Ser Leu Ser
320          20          25          30
322 Asn Asn Ser Leu Leu Val Pro Thr Ser Gly Ile Tyr Phe Val Tyr Ser
323          35          40          45
325 Gln Val Val Phe Ser Gly Lys Ala Tyr Ser Pro Lys Ala Thr Ser Ser
326      50          55          60
328 Pro Leu Tyr Leu Ala His Glu Val Gln Leu Phe Ser Ser Gln Tyr Pro
329      65          70          75          80
331 Phe His Val Pro Leu Ser Ser Gln Lys Met Val Tyr Pro Gly Leu
332          85          90          95
334 Gln Glu Pro Trp Leu His Ser Met Tyr His Gly Ala Ala Phe Gln Leu
335          100         105         110
337 Thr Gln Gly Asp Gln Leu Ser Thr His Thr Asp Gly Ile Pro His Leu
338          115         120         125
340 Val Leu Ser Pro Ser Thr Val Phe Phe Gly Ala Phe Ala Leu

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VERIFICATION SUMMARY

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